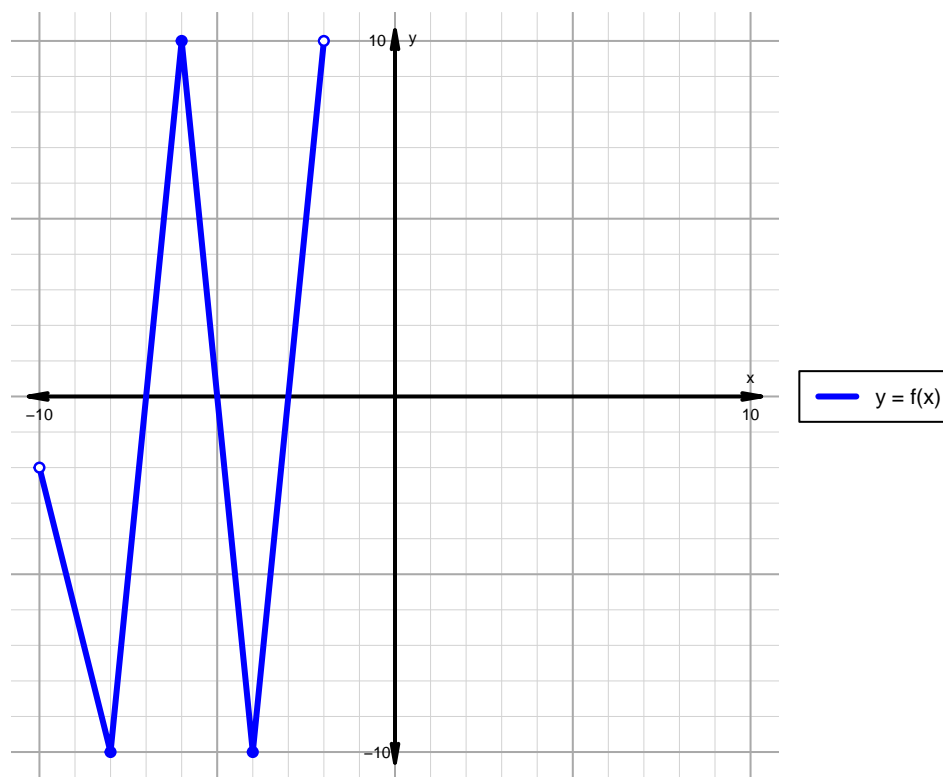


Name: \_\_\_\_\_

Date: \_\_\_\_\_

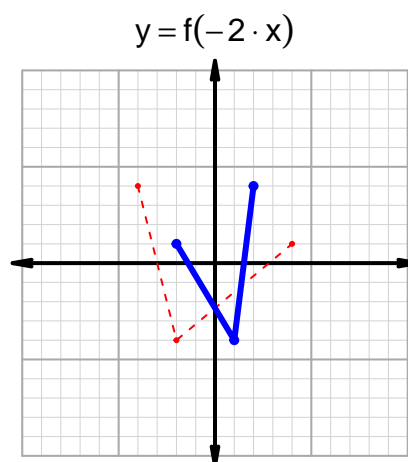
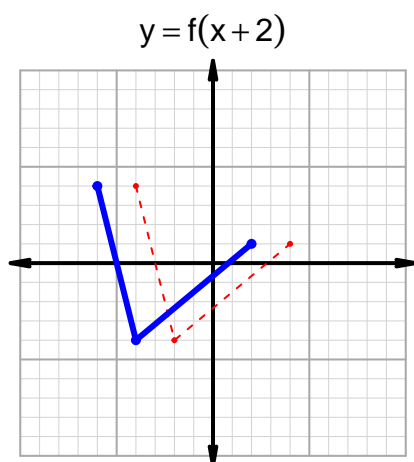
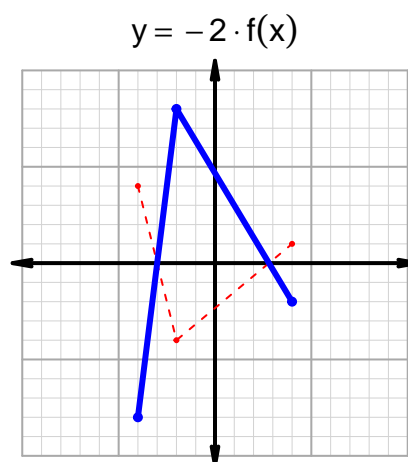
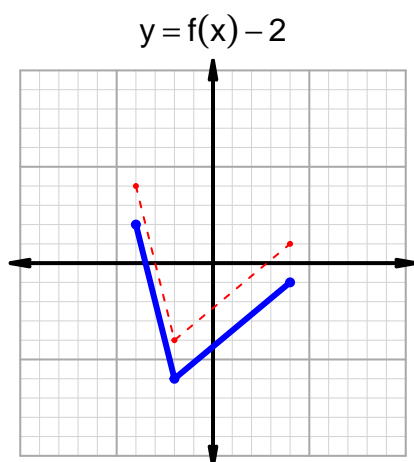
**Intervals, Transformations, and Slope Solution (version 4)**1. The function  $f$  is graphed below.

Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-7, -5) \cup (-3, -2)$
Negative	$(-10, -7) \cup (-5, -3)$
Increasing	$(-8, -6) \cup (-4, -2)$
Decreasing	$(-10, -8) \cup (-6, -4)$
Domain	$(-10, -2)$
Range	$(-10, 10)$

## Intervals, Transformations, and Slope Solution (version 4)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 39$  and  $x_2 = 75$ . Express your answer as a reduced fraction.

$x$	$g(x)$
16	75
39	16
58	39
75	58

$$\frac{g(75) - g(39)}{75 - 39} = \frac{58 - 16}{75 - 39} = \frac{42}{36}$$

The greatest common factor of 42 and 36 is 6. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{7}{6}$$